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(71)Applicant : DAIKIN IND LTD

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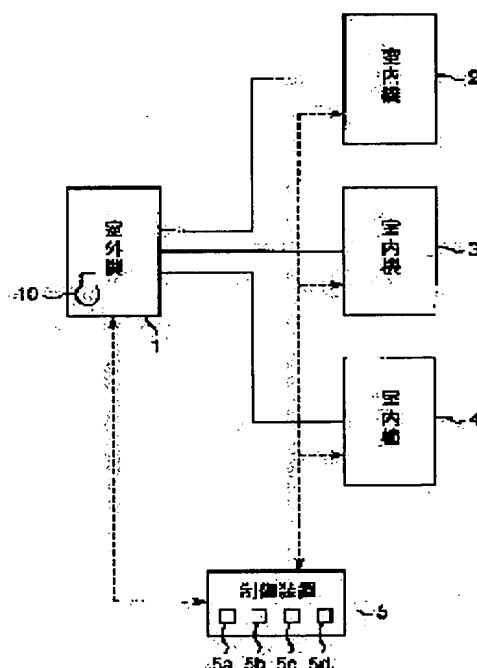
(72)Inventor : KATAOKA HIDEHIKO
NAKAMURA HIROSHI
KITAGAWA TAKESHI

(54) MULTIPLE TYPE AIR CONDITIONER

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a multiple type air conditioner capable of securely Improving air conditioning capability of an indoor machine of a priority room even when an indoor machine of another room other than the priority room is running.

SOLUTION: A preference room selection section 5a selects any one among a plurality of indoor machines 2 to 3. An operation mode set section 5b sets to another indoor machine the same operation mode as that of the indoor machine selected by the preference room selection section 5a. An air conditioning capability control section 5c increases the amount of blowoff air from the indoor machine selected by the preference room selection section 5a and further increases operation frequency of a compressor of an outdoor machine 1. Further, when there are increased the amount of blowoff air of the indoor machine preferentially selected by the air conditioning capability control section 5c and the operation frequency of the compressor of the outdoor machine 1, a set temperature alteration section 5d alters set temperature of thermostat-off such that another indoor machine is likely to undergo thermostat-off.



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CLAIMS

[Claim(s)]

[Claim 1] In the multi-mold air conditioner equipped with the control device (5) which controls the exterior unit (1) which has a compressor, two or more interior units (2-3) connected to the above-mentioned exterior unit (1), respectively, and the above-mentioned exterior unit (1) and two or more above-mentioned interior units (2-3) The interior unit selection section as which the above-mentioned control unit (5) chooses any one of two or more above-mentioned interior units (2-3) (5a), The operation mode setting-out section which sets the same operation mode as the operation mode of the interior unit chosen by the above-mentioned interior unit selection section (5a) as other interior units (5b), While raising the blowdown air capacity of the interior unit chosen by the above-mentioned interior unit selection section (5a) based on the command which improves the air conditioning capacity of the interior unit chosen by the above-mentioned interior unit selection section (5a) When raising the air conditioning capacity control section (5c) which raises the operation frequency of the compressor of the above-mentioned exterior unit (1), and the blowdown air capacity of an interior unit and the operation frequency of the compressor of the above-mentioned exterior unit (1) in which precedence selection was made [above-mentioned] by the above-mentioned air conditioning capacity control section (5c), The multi-mold air conditioner characterized by having the laying temperature modification section (5d) which changes the laying temperature of thermostat-off so that it may be easy to carry out thermostat-off of the interior unit besides the above.

[Claim 2] In a multi-mold air conditioner according to claim 1 the above-mentioned laying temperature modification section (5d) of the above-mentioned control unit (5) When raising the blowdown air capacity of an interior unit and the operation frequency of the compressor of the above-mentioned exterior unit (1) in which precedence selection was made [above-mentioned] by the above-mentioned air conditioning capacity control section (5c), The multi-mold air conditioner characterized by performing at least one side of modification which lowers the laying temperature of thermostat-off of an interior unit besides the above at modification which raises the laying temperature of thermostat-off of an interior unit besides the above at the time of cooling operation, or the time of heating operation.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the multi-mold air conditioner which has an exterior unit and two or more interior units.

[0002]

[Description of the Prior Art] Conventionally, there is a thing equipped with the control unit which controls an exterior unit, two or more interior units connected to the above-mentioned exterior unit, respectively, and the above-mentioned exterior unit and two or more interior units as a multi-mold air conditioner. When the precedence chamber which gives priority to operation modes (cooling, heating, etc.) in each part store in which two or more above-mentioned interior units were installed, respectively is not chosen, the above-mentioned multi-mold air conditioner The interior unit of each part store has the precedence chamber optional feature of operating other interior units by the operation mode of the interior unit by which precedence chamber selection was made, when selection is carried out for the precedence chamber to any one of two or more interior units to operating by the operation mode which was being operated till then.

[0003]

[Problem(s) to be Solved by the Invention] By the way, when improving the air conditioning capacity of the interior unit by which precedence chamber selection was made, while raising the air capacity of the blowdown of the interior unit, the operation frequency of the compressor of an exterior unit is raised in the above-mentioned multi-mold air conditioner. Since the capacity of other chambers is also improved while other interior units are operating at this time, the interior unit by which precedence chamber selection was made seldom changes blowdown temperature, but there is a problem that air conditioning capacity is not improved in the forge fire which a resident expects.

[0004] Then, the object of this invention is to offer the multi-mold air conditioner which can improve certainly the air conditioning capacity of the interior unit of a precedence chamber, even if the interior unit of a room besides other than a precedence chamber is operating.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned object, the multi-mold air conditioner of claim 1 In the multi-mold air conditioner equipped with the control device which controls the exterior unit which has a compressor, two or more interior units connected to the above-mentioned exterior unit, respectively, and the above-mentioned exterior unit and two or more above-mentioned interior units The interior unit selection section as which the above-mentioned control unit chooses any one of two or more above-mentioned interior units, The operation mode setting-out section which sets the same operation mode as the operation mode of the interior unit chosen by the above-mentioned interior unit selection section as other interior units, While raising the blowdown air capacity of the interior unit chosen by the above-mentioned interior unit selection section based on the command which improves the air conditioning capacity of the interior unit chosen by the above-mentioned interior unit selection section When raising the air conditioning capacity control section which raises the operation frequency of the compressor of the above-mentioned exterior unit, and the blowdown air capacity of an interior unit and the operation frequency of the compressor of the above-mentioned exterior unit in which precedence selection was made [above-mentioned] by the

above-mentioned air conditioning capacity control section, It is characterized by having the laying temperature modification section which changes the laying temperature of thermostat-off so that it may be easy to carry out thermostat-off of the interior unit besides the above.

[0006] If any one of two or more above-mentioned interior units is chosen by the above-mentioned interior unit selection section according to the multi-mold air conditioner of above-mentioned claim 1, the above-mentioned operation mode setting-out section will set the same operation mode as the operation mode of the interior unit chosen by the interior unit selection section as other interior units. Moreover, while raising the blowdown air capacity of the interior unit chosen by the above-mentioned air conditioning capacity control section by the interior unit selection section based on the command which improves the air conditioning capacity of the interior unit chosen by the above-mentioned interior unit selection section, the laying temperature of thermostat-off is changed so that an interior unit besides the above may tend to carry out thermostat-off of the operation frequency of the compressor of the above-mentioned exterior unit by the above-mentioned laying temperature modification section at raising and a pan. Since operation is stopped by thermostat-off earlier than usual and capacity is centralized on the interior unit by which precedence chamber selection was made even if the interior unit of other clubrooms other than a precedence chamber is operating by doing so, the air conditioning capacity of the interior unit of a precedence chamber can be improved certainly.

[0007] The multi-mold air conditioner of claim 2 is set to the multi-mold air conditioner of claim 1. Moreover, the above-mentioned laying temperature modification section of the above-mentioned control unit When raising the blowdown air capacity of an interior unit and the operation frequency of the compressor of the above-mentioned exterior unit in which precedence selection was made [above-mentioned] by the above-mentioned air conditioning capacity control section, It is characterized by performing at least one side of modification which lowers the laying temperature of thermostat-off of an interior unit besides the above at modification which raises the laying temperature of thermostat-off of an interior unit besides the above at the time of cooling operation, or the time of heating operation.

[0008] When raising the blowdown air capacity of an interior unit and the operation frequency of the compressor of the above-mentioned exterior unit in which precedence selection was made [above-mentioned] by the above-mentioned air conditioning capacity control section according to the multi-mold air conditioner of above-mentioned claim 2, While suspending cooling operation a little early than modification before by raising the laying temperature of thermostat-off of an interior unit besides the above in cooling operation by the above-mentioned laying temperature modification section, in heating operation By lowering the laying temperature of thermostat-off of an interior unit besides the above by the above-mentioned laying temperature modification section, heating operation is suspended a little early than modification before. Therefore, operation of an interior unit besides the above can be made easy to suspend in any [of cooling operation and heating operation] case. In addition, this multi-mold air conditioner may perform either cooling operation or heating operation, and may perform air conditioning operation.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of a graphic display explains the multi-mold air conditioner of this invention to a detail.

[0010] Drawing 1 is the outline block diagram of the multi-mold air conditioner of one gestalt of implementation of this invention, and the exterior unit with which 1 has a compressor 10, the interior unit by which 2-4 were connected to the above-mentioned exterior unit, respectively, and 5 are control units which control the above-mentioned exterior unit 1 and interior units 2-4. Precedence chamber selection section 5a as the interior unit selection section to which the above-mentioned control unit 5 makes precedence chamber selection of any one of interior units 2-4, Operation mode setting-out section 5b which sets the same operation mode as the operation mode set as the interior unit chosen by the above-mentioned precedence chamber selection section 5a as other interior units, Air conditioning capacity control-section 5c which raises the blowdown air capacity of an interior unit and the operation frequency of the compressor 10 of the above-mentioned exterior unit 1 by which precedence chamber selection was made [above-mentioned], When raising the blowdown air capacity of an interior unit and

the operation frequency of the compressor 10 of the above-mentioned exterior unit 1 in which precedence selection was made by the above-mentioned air conditioning capacity control-section 5c, it has 5d of laying temperature modification sections which change the laying temperature of thermostat-off so that it may be easy to carry out thermostat-off of other interior units.

[0011] In the multi-mold air conditioner of the above-mentioned configuration, when performing cooling operation or heating operation, any one of interior units 2-4 is chosen as a precedence chamber by precedence chamber selection section 5a of a control unit 5. The operation mode of the interior unit of other chambers is set as cooling operation mode, even if front operational status is heating operation mode by operation mode setting-out section 5b as the interior unit by which precedence chamber selection was made is cooling operation mode if it does so. Thus, since the operation mode of the interior unit of other chambers is unified into the operation mode set as one interior unit by which precedence chamber selection was made, the operation mode of all interior units can be simultaneously changed by changing the operation mode of the interior unit by which operation mode which is different in each interior unit is not set up, and precedence chamber selection was made.

[0012] Moreover, it has the powerful operation function which raises predetermined time, the blowdown air capacity of an interior unit, and the operation frequency of the compressor of an exterior unit in the above-mentioned multi-mold air conditioner, and raises air conditioning capacity by it temporarily. While raising the blowdown air capacity of an interior unit with the demand of powerful operation by air conditioning capacity control-section 5c of a control unit 5 if the demand of powerful operation is carried out by any one of the above-mentioned interior units 2-4 when precedence chamber selection is not made, the operation frequency of the compressor 10 of an exterior unit 1 is raised in this powerful operation. In this case, since the service condition of the interior unit of other chambers does not change, the blowdown temperature of the interior unit of the chamber which the air conditioning capacity of other interior units was also improved, and had the demand of powerful operation seldom changes, and is not enough. [of a rise of air conditioning capacity]

[0013] Then, in order to raise only the air conditioning capacity of the interior unit by which precedence chamber selection was made in the above-mentioned multi-mold air conditioner, any one of interior units 2-4 is chosen as a precedence chamber by precedence chamber selection section 5a of a control unit 5. Then, if powerful operation is required with the interior unit by which precedence chamber selection was made [above-mentioned], while raising the blowdown air capacity of the interior unit which had the demand of powerful operation by air conditioning capacity control-section 5c of a control unit 5 based on the command which improves the air conditioning capacity of the interior unit by which precedence chamber selection was made, the laying temperature of raising and thermostat-off of the interior unit of others [further] 5d of laying temperature modification sections of a control unit 5 of the operation frequency of the compressor 10 of an exterior unit 1 is changed. namely, -- cooling operation -- a thermostat -- off laying temperature -- raising and heating operation -- a thermostat -- by lowering off laying temperature and carrying out thermostat-off earlier than usual, operation of other interior units is stopped and capacity is centralized on the interior unit by which precedence chamber selection was made.

[0014] Drawing 2 and drawing 3 are flow charts which show actuation of the above-mentioned control device 5, and explain precedence chamber selection processing and powerful operation processing of a control device 5 below according to drawing 2 and drawing 3 .

[0015] First, if it distinguishes that it distinguishes whether it is precedence chamber selection at step S1, and is precedence chamber selection if processing starts, it will progress to step S2, and if it is not precedence chamber selection and will distinguish, it will progress to step S11 shown in drawing 3 .

[0016] Next, if it distinguishes whether they are those with a powerful demand from a precedence chamber at step S2 and distinguishes from those with a powerful demand from a precedence chamber, it will progress to step S3, and this processing will be ended if it distinguishes having no powerful demand from a precedence chamber.

[0017] Next, the blowdown air capacity of the interior unit of a precedence chamber is raised at step S3.

[0018] Next, it progresses to step S4, and if it distinguishes whether it is cooling operation and distinguishes that it is cooling operation, it will progress to step S7, after progressing to step S5 and lowering the laying temperature of a precedence chamber. It progresses to step S7, after progressing that it is heating operation to step S6 and, raising the laying temperature of a precedence chamber on the other hand, if it is not cooling operation in step S4 and will distinguish namely.

[0019] Next, the operation frequency of a compressor 10 is raised at step S7.

[0020] Next, if it progresses to step S8, it distinguishes whether it is cooling operation and it distinguishes that it is cooling operation, it will progress to step S9, the laying temperature of chambers other than a precedence chamber will be raised, and this processing will be ended. On the other hand, if it is not cooling operation at step S8 and will distinguish, it will progress to step S10, the laying temperature of chambers other than a precedence chamber will be lowered, and this processing will be ended.

[0021] This processing will be ended, if it distinguishes having no powerful demand while progressing to step S11 shown in drawing 3 on the other hand when it will distinguish, if it is not precedence chamber selection at step S1, and progressing to step S12, if it distinguishes whether they are those with a powerful demand and distinguishes from those with a powerful demand.

[0022] Next, the blowdown air capacity of the interior unit of a chamber with a powerful demand is raised at step S12.

[0023] Next, if it progresses to step S13, it distinguishes whether it is cooling operation and it distinguishes that it is cooling operation, it will progress to step S14, the laying temperature of a chamber with a powerful demand will be raised, and this processing will be ended. On the other hand, if it is not cooling operation at step S15 and will distinguish, it will progress to step S10, the laying temperature of a chamber with a powerful demand will be lowered, and this processing will be ended.

[0024] Thus, when giving a powerful demand to the interior unit by which precedence chamber selection was made, while raising the blowdown air capacity of the interior unit in the above-mentioned multi-mold air conditioner The interior unit of a room besides other than a precedence chamber can improve certainly the air conditioning capacity of the interior unit of a precedence chamber also in operation by changing laying temperature so that raising and the thermostat-off of the interior unit of other chambers by which precedence chamber selection is not made further may become early about the operation frequency of the compressor of an exterior unit.

[0025] Moreover, by raising the laying temperature of thermostat-off of an interior unit besides the above in cooling operation by 5d of laying temperature modification sections at the time of powerful operation While suspending cooling operation a little early than modification before, in heating operation Operation of an interior unit besides the above can be made easy to suspend heating operation a little early than modification before, and to suspend by lowering the laying temperature of thermostat-off of an interior unit besides the above by 5d of laying temperature modification sections, in any [of cooling operation and heating operation] case.

[0026] With the gestalt of the above-mentioned implementation, although the above-mentioned control device 5 explained the multi-mold air conditioner prepared independently [an exterior unit 1 and interior units 2-4], it may constitute a control device from a control section prepared in the exterior unit and the interior unit, respectively.

[0027] Moreover, what is necessary is just to set up suitably the modification value when raising the modification value when changing the laying temperature of thermostat-off of the above-mentioned interior unit 2-4, and the operation frequency of the compressor of an exterior unit 1 with the gestalt of the above-mentioned implementation according to the configuration, the capacity, and the installation conditions of a multi-mold air conditioner.

[0028] Moreover, although the gestalt of the above-mentioned implementation explained the multi-mold air conditioner which performs cooling operation and heating operation, this invention

may be applied to the multi-mold air conditioner which performs either cooling operation or heating operation.

[0029]

[Effect of the Invention] So that clearly as mentioned above, the multi-mold air conditioner of invention of claim 1 In the multi-mold air conditioner equipped with the control device which controls the exterior unit with which the multi-mold air conditioner of claim 1 has a compressor, two or more interior units connected to the above-mentioned exterior unit, respectively, and the above-mentioned exterior unit and two or more interior units While setting the same operation mode as the operation mode of the interior unit which the interior unit selection section of the above-mentioned control unit chose any one of two or more above-mentioned interior units, and was chosen by the operation mode setting-out section by the interior unit selection section as other interior units While raising the blowdown air capacity of the interior unit chosen by the air conditioning capacity control section by the interior unit selection section based on the command which improves the air conditioning capacity of the interior unit chosen by the interior unit selection section When raising raising, and the blowdown air capacity of an interior unit and the operation frequency of the compressor of an exterior unit in which precedence selection was further made by the air conditioning capacity control section for the operation frequency of the compressor of the above-mentioned exterior unit, By the laying temperature modification section, the laying temperature of thermostat-off is changed so that it may be easy to carry out thermostat-off of the interior unit besides the above.

[0030] Therefore, when raising the blowdown air capacity of an interior unit and the operation frequency of the compressor of an exterior unit in which precedence selection was made by the above-mentioned air conditioning capacity control section according to the multi-mold air conditioner of invention of claim 1, By changing the laying temperature of thermostat-off by the laying temperature modification section, so that it may be easy to carry out thermostat-off of the interior unit besides the above Since operation is stopped by thermostat-off earlier than usual and capacity is centralized on the interior unit by which precedence chamber selection was made even if the interior unit of other clubrooms other than a precedence chamber is operating, the air conditioning capacity of the interior unit of a precedence chamber can be improved certainly.

[0031] Moreover, the multi-mold air conditioner of invention of claim 2 In the multi-mold air conditioner boiled claim 1 the above-mentioned laying temperature modification section of the above-mentioned control unit When raising the blowdown air capacity of an interior unit and the operation frequency of the compressor of the above-mentioned exterior unit in which precedence selection was made [above-mentioned] by the above-mentioned air conditioning capacity control section, In modification which raises the laying temperature of thermostat-off of an interior unit besides the above at the time of cooling operation Or since at least one side of modification which lowers the laying temperature of thermostat-off of an interior unit besides the above at the time of heating operation is performed, operation of an interior unit besides the above can be made easy to suspend in any [of cooling operation and heating operation] case.

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(71)出願人

000002853

ダイキン工業株式会社

大阪府大阪市北区中崎西2丁目4番12号

梅田センタービル

(72)発明者

片岡 秀彦

滋賀県草津市岡本町字大谷1000番地の2

ダイキン工業株式会社滋賀製作所内

(72)発明者

中村 博

滋賀県草津市岡本町字大谷1000番地の2

ダイキン工業株式会社滋賀製作所内

(74)代理人

100062144

弁理士 青山 稔 (外1名)

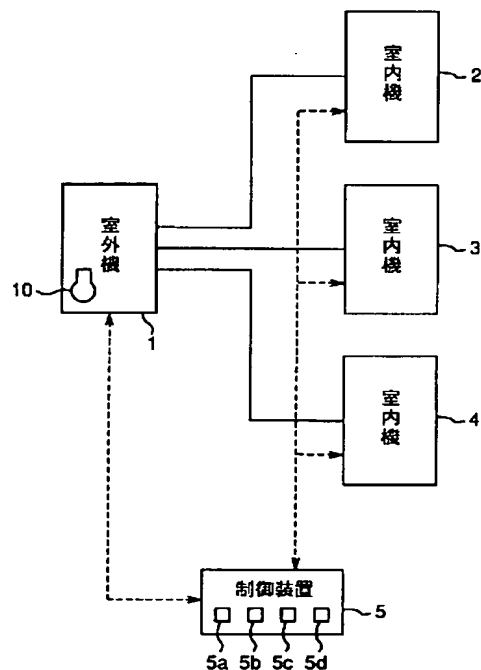
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(54)【発明の名称】 マルチ型空調和機

(57)【要約】

【課題】 優先部屋以外の他室の室内機が運転中であっても、優先部屋の室内機の空調能力を確実に上げることができるマルチ型空調和機を提供する。

【解決手段】 優先部屋選択部5aは、複数の室内機2～3のうちのいずれか1つを選択する。運転モード設定部5bによって、優先部屋選択部5aにより選択された室内機の運転モードと同一の運転モードを他の室内機に設定する。空調能力制御部5cによって、優先部屋選択部5aにより選択された室内機の吹き出し風量を上げると共に、室外機1の圧縮機の運転周波数を上げる。さらに、上記空調能力制御部5cにより上記優先選択された室内機の吹き出し風量と室外機1の圧縮機の運転周波数とを上げるとき、設定温度変更部5dにより上記他の室内機がサーモオフしやすいようにサーモオフの設定温度を変更する。



【特許請求の範囲】

【請求項 1】 圧縮機を有する室外機(1)と、上記室外機(1)に夫々接続された複数の室内機(2～3)と、上記室外機(1)と上記複数の室内機(2～3)とを制御する制御装置(5)とを備えたマルチ型空気調和機において、上記制御装置(5)は、

上記複数の室内機(2～3)のうちのいずれか 1 つを選択する室内機選択部(5 a)と、

上記室内機選択部(5 a)により選択された室内機の運転モードと同一の運転モードを他の室内機に設定する運転モード設定部(5 b)と、

上記室内機選択部(5 a)により選択された室内機の空調能力を上げる指令に基づいて、上記室内機選択部(5 a)により選択された室内機の吹き出し風量を上げると共に、上記室外機(1)の圧縮機の運転周波数を上げる空調能力制御部(5 c)と、

上記空調能力制御部(5 c)により上記優先選択された室内機の吹き出し風量と上記室外機(1)の圧縮機の運転周波数とを上げるとき、上記他の室内機がサーモオフしやすいようにサーモオフの設定温度を変更する設定温度変更部(5 d)とを有することを特徴とするマルチ型空気調和機。

【請求項 2】 請求項 1 に記載のマルチ型空気調和機において、

上記制御装置(5)の上記設定温度変更部(5 d)は、上記空調能力制御部(5 c)により上記優先選択された室内機の吹き出し風量と上記室外機(1)の圧縮機の運転周波数とを上げるとき、冷房運転時に上記他の室内機のサーモオフの設定温度を上げる変更か、または、暖房運転時に上記他の室内機のサーモオフの設定温度を下げる変更の少なくとも一方を行うことを特徴とするマルチ型空気調和機。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】この発明は、室外機と複数の室内機とを有するマルチ型空気調和機に関する。

【0002】

【従来の技術】従来、マルチ型空気調和機としては、室外機と、上記室外機に夫々接続された複数の室内機と、上記室外機と複数の室内機とを制御する制御装置とを備えたものがある。上記マルチ型空気調和機は、上記複数の室内機が夫々設置された各部屋において運転モード(冷房、暖房等)を優先する優先部屋が選択されていない場合は、各部屋の室内機はそれまで運転していた運転モードで運転を行うのに対して、複数の室内機の中のいずれか 1 つに優先部屋が選択がされている場合に、優先部屋選択された室内機の運転モードで他の室内機も運転するという優先部屋選択機能を有している。

【0003】

【発明が解決しようとする課題】ところで、上記マルチ

型空気調和機では、優先部屋選択された室内機の空調能力を上げるとき、その室内機の吹き出しの風量を上げると共に、室外機の圧縮機の運転周波数を上げる。このとき、他の室内機が運転しているときは、他の部屋の能力も上がるため、優先部屋選択された室内機は、吹き出し温度が余り変わらず、居住者が期待するほどには空調能力が上がらないという問題がある。

【0004】そこで、この発明の目的は、優先部屋以外の他室の室内機が運転中であっても、優先部屋の室内機の空調能力を確実に上げることができるマルチ型空気調和機を提供することにある。

【0005】

【課題を解決するための手段】上記目的を達成するため、請求項 1 のマルチ型空気調和機は、圧縮機を有する室外機と、上記室外機に夫々接続された複数の室内機と、上記室外機と上記複数の室内機とを制御する制御装置とを備えたマルチ型空気調和機において、上記制御装置は、上記複数の室内機の中のいずれか 1 つを選択する室内機選択部と、上記室内機選択部により選択された室内機の運転モードと同一の運転モードを他の室内機に設定する運転モード設定部と、上記室内機選択部により選択された室内機の空調能力を上げる指令に基づいて、上記室内機選択部により選択された室内機の吹き出し風量を上げると共に、上記室外機の圧縮機の運転周波数を上げる空調能力制御部と、上記空調能力制御部により上記優先選択された室内機の吹き出し風量と上記室外機の圧縮機の運転周波数とを上げるとき、上記他の室内機がサーモオフしやすいようにサーモオフの設定温度を変更する設定温度変更部とを有することを特徴としている。

【0006】上記請求項 1 のマルチ型空気調和機によれば、上記室内機選択部により上記複数の室内機の中のいずれか 1 つを選択すると、上記運転モード設定部は、室内機選択部により選択された室内機の運転モードと同一の運転モードを他の室内機に設定する。また、上記室内機選択部により選択された室内機の空調能力を上げる指令に基づいて、上記空調能力制御部により、室内機選択部により選択された室内機の吹き出し風量を上げると共に、上記室外機の圧縮機の運転周波数を上げ、さらに上記設定温度変更部により、上記他の室内機がサーモオフしやすいようにサーモオフの設定温度を変更する。そうすることによって、優先部屋以外の他の部屋の室内機が運転中であっても、通常よりも早くサーモオフにより運転を停止させ、能力を優先部屋選択された室内機に集中させるので、優先部屋の室内機の空調能力を確実に上げることができる。

【0007】また、請求項 2 のマルチ型空気調和機は、請求項 1 のマルチ型空気調和機において、上記制御装置の上記設定温度変更部は、上記空調能力制御部により上記優先選択された室内機の吹き出し風量と上記室外機の圧縮機の運転周波数とを上げるとき、冷房運転時に上記

他の室内機のサーモオフの設定温度を上げる変更か、または、暖房運転時に上記他の室内機のサーモオフの設定温度を下げる変更の少なくとも一方を行うことを特徴としている。

【0008】上記請求項2のマルチ型空気調和機によれば、上記空調能力制御部により上記優先選択された室内機の吹き出し風量と上記室外機の圧縮機の運転周波数とを上げるとき、冷房運転では、上記設定温度変更部により上記他の室内機のサーモオフの設定温度を上げることによって、変更前よりも早めに冷房運転を停止する一方、暖房運転では、上記設定温度変更部により上記他の室内機のサーモオフの設定温度を下げることによって、変更前よりも早めに暖房運転を停止する。したがって、冷房運転および暖房運転のいずれの場合でも、上記他の室内機の運転を停止しやすくてできる。なお、このマルチ型空気調和機は、冷房運転または暖房運転のいずれか一方のみを行うものでもよいし、冷暖房運転を行うものでもよい。

【0009】

【発明の実施の形態】以下、この発明のマルチ型空気調和機を図示の実施の形態により詳細に説明する。

【0010】図1はこの発明の実施の一形態のマルチ型空気調和機の概略構成図であり、1は圧縮機10を有する室外機、2～4は上記室外機に夫々接続された室内機、5は上記室外機1、室内機2～4を制御する制御装置である。上記制御装置5は、室内機2～4のうちのいずれか1つを優先部屋選択する室内機選択部としての優先部屋選択部5aと、上記優先部屋選択部5aにより選択された室内機に設定された運転モードと同一の運転モードを他の室内機に設定する運転モード設定部5bと、上記優先部屋選択された室内機の吹き出し風量と上記室外機1の圧縮機10の運転周波数とを上げる空調能力制御部5cと、上記空調能力制御部5cにより優先選択された室内機の吹き出し風量と上記室外機1の圧縮機10の運転周波数とを上げるとき、他の室内機がサーモオフしやすいうようにサーモオフの設定温度を変更する設定温度変更部5dとを有している。

【0011】上記構成のマルチ型空気調和機において、冷房運転または暖房運転を行う場合、制御装置5の優先部屋選択部5aにより室内機2～4のうちのいずれか1つを優先部屋として選択する。そうすると、優先部屋選択された室内機が冷房運転モードであると、他の部屋の室内機の運転モードは、運転モード設定部5bにより前の運転状態が暖房運転モードであっても冷房運転モードに設定される。このように、優先部屋選択された1つの室内機に設定された運転モードに他の部屋の室内機の運転モードが統一されるので、各室内機に異なる運転モードが設定されることがなく、優先部屋選択された室内機の運転モードを変更することにより、全ての室内機の運転モードを同時に変更することができる。

【0012】また、上記マルチ型空気調和機では、所定時間、室内機の吹き出し風量と室外機の圧縮機の運転周波数を上げて、空調能力を一時的に上げるパワフル運転機能を有している。このパワフル運転では、優先部屋選択がされていない場合は、上記室内機2～4のうちのいずれか1つでパワフル運転の要求がされると、制御装置5の空調能力制御部5cによって、パワフル運転の要求があった室内機の吹き出し風量を上げると共に、室外機1の圧縮機10の運転周波数を上げる。この場合、他の部屋の室内機の運転条件は変わらないので、他の室内機の空調能力も上がり、パワフル運転の要求があった部屋の室内機の吹き出し温度は余り変わらず、空調能力のアップが十分でない。

【0013】そこで、上記マルチ型空気調和機では、優先部屋選択された室内機の空調能力のみを上げるために、制御装置5の優先部屋選択部5aにより室内機2～4のうちのいずれか1つを優先部屋として選択する。そうして、上記優先部屋選択された室内機でパワフル運転を要求すると、優先部屋選択された室内機の空調能力を上げる指令に基づいて、制御装置5の空調能力制御部5cによりパワフル運転の要求があった室内機の吹き出し風量を上げると共に、室外機1の圧縮機10の運転周波数を上げ、さらに、制御装置5の設定温度変更部5dにより他の室内機のサーモオフの設定温度を変更する。すなわち、冷房運転ではサーモオフの設定温度を上げ、暖房運転ではサーモオフの設定温度を下げて、通常よりも早くサーモオフさせることによって、他の室内機の運転を停止させ、能力を優先部屋選択された室内機に集中させるのである。

【0014】図2、図3は上記制御装置5の動作を示すフローチャートであり、図2、図3に従って制御装置5の優先部屋選択処理およびパワフル運転処理について以下に説明する。

【0015】まず、処理がスタートすると、ステップS1で優先部屋選択か否かを判別して、優先部屋選択であると判別すると、ステップS2に進み、優先部屋選択でないとは判別すると、図3に示すステップS11に進む。

【0016】次に、ステップS2で優先部屋からパワフル要求有りか否かを判別して、優先部屋からパワフル要求有りと判別すると、ステップS3に進み、優先部屋からパワフル要求無しと判別すると、この処理を終了する。

【0017】次に、ステップS3で優先部屋の室内機の吹き出し風量を上げる。

【0018】次に、ステップS4に進み、冷房運転か否かを判別して、冷房運転であると判別すると、ステップS5に進み、優先部屋の設定温度を下げた後、ステップS7に進む。一方、ステップS4で冷房運転でないと判別すると、すなわち暖房運転であると、ステップS6に進み、優先部屋の設定温度を上げた後、ステップS7に

進む。

【0019】次に、ステップS7で圧縮機10の運転周波数を上げる。

【0020】次に、ステップS8に進み、冷房運転か否かを判別して、冷房運転であると判別すると、ステップS9に進み、優先部屋以外の部屋の設定温度を上げて、この処理を終了する。一方、ステップS8で冷房運転でないと判別すると、ステップS10に進み、優先部屋以外の部屋の設定温度を下げて、この処理を終了する。

【0021】一方、ステップS1で優先部屋選択でないと判別すると、図3に示すステップS11に進み、パワフル要求有りか否かを判別して、パワフル要求有りと判別すると、ステップS12に進む一方、パワフル要求無しと判別すると、この処理を終了する。

【0022】次に、ステップS12でパワフル要求のあった部屋の室内機の吹き出し風量を上げる。

【0023】次に、ステップS13に進み、冷房運転か否かを判別して、冷房運転であると判別すると、ステップS14に進み、パワフル要求のあった部屋の設定温度を上げて、この処理を終了する。一方、ステップS15で冷房運転でないと判別すると、ステップS10に進み、パワフル要求のあった部屋の設定温度を下げて、この処理を終了する。

【0024】このように、上記マルチ型空気調和機では、優先部屋選択された室内機にパワフル要求をする場合に、その室内機の吹き出し風量を上げると共に、室外機の圧縮機の運転周波数を上げ、さらに、優先部屋選択されていない他の部屋の室内機のサーモオフが早くなるように設定温度を変更することによって、優先部屋以外の他室の室内機が運転中でも、優先部屋の室内機の空調能力を確実に上げることができる。

【0025】また、パワフル運転時、冷房運転では、設定温度変更部5dにより上記他の室内機のサーモオフの設定温度を上げることによって、変更前よりも早めに冷房運転を停止する一方、暖房運転では、設定温度変更部5dにより上記他の室内機のサーモオフの設定温度を下げることによって、変更前よりも早めに暖房運転を停止し、冷房運転および暖房運転のいずれの場合でも、上記他の室内機の運転を停止しやすくなる。

【0026】上記実施の形態では、上記制御装置5は、室外機1、室内機2〜4とは別に設けたマルチ型空気調和機について説明したが、制御装置は、室外機、室内機に夫々設けられた制御部で構成してもよい。

【0027】また、上記実施の形態では、上記室内機2〜4のサーモオフの設定温度を変更するときの変更値および室外機1の圧縮機の運転周波数を上げるときの変更値は、マルチ型空気調和機の構成、能力および設置条件に応じて適宜設定すればよい。

【0028】また、上記実施の形態では、冷房運転および暖房運転を行うマルチ型空気調和機について説明した

が、冷房運転または暖房運転のいずれか一方のみを行うマルチ型空気調和機にこの発明を適用してもよい。

【0029】

【発明の効果】以上より明らかなように、請求項1の発明のマルチ型空気調和機は、請求項1のマルチ型空気調和機は、圧縮機を有する室外機と、上記室外機に夫々接続された複数の室内機と、上記室外機と複数の室内機とを制御する制御装置とを備えたマルチ型空気調和機において、上記制御装置の室内機選択部は、上記複数の室内機のうちのいずれか1つを選択し、運転モード設定部によって、室内機選択部により選択された室内機の運転モードと同一の運転モードを他の室内機に設定すると共に、室内機選択部により選択された室内機の空調能力を上げる指令に基づいて、空調能力制御部によって、室内機選択部により選択された室内機の吹き出し風量を上げると共に、上記室外機の圧縮機の運転周波数を上げ、さらに、空調能力制御部により優先選択された室内機の吹き出し風量と室外機の圧縮機の運転周波数とを上げるとき、設定温度変更部によって、上記他の室内機がサーモオフしやすいうようにサーモオフの設定温度を変更するものである。

【0030】したがって、請求項1の発明のマルチ型空気調和機によれば、上記空調能力制御部により優先選択された室内機の吹き出し風量と室外機の圧縮機の運転周波数とを上げるとき、設定温度変更部によって、上記他の室内機がサーモオフしやすいうようにサーモオフの設定温度を変更することによって、優先部屋以外の他の部屋の室内機が運転中であっても、通常よりも早くサーモオフにより運転を停止させて、能力を優先部屋選択された室内機に集中させるので、優先部屋の室内機の空調能力を確実に上げることができる。

【0031】また、請求項2の発明のマルチ型空気調和機は、請求項1のマルチ型空気調和機において、上記制御装置の上記設定温度変更部は、上記空調能力制御部により上記優先選択された室内機の吹き出し風量と上記室外機の圧縮機の運転周波数とを上げるとき、冷房運転時に上記他の室内機のサーモオフの設定温度を上げる変更か、または、暖房運転時に上記他の室内機のサーモオフの設定温度を下げる変更の少なくとも一方を行うので、冷房運転および暖房運転のいずれの場合でも、上記他の室内機の運転を停止しやすくなる。

【図面の簡単な説明】

【図1】 図1はこの発明の実施の一形態のマルチ型空気調和機の概略構成図である。

【図2】 図2は上記マルチ型空気調和機の制御装置の動作を示すフローチャートである。

【図3】 図3は図2に続く上記マルチ型空気調和機の制御装置の動作を示すフローチャートである。

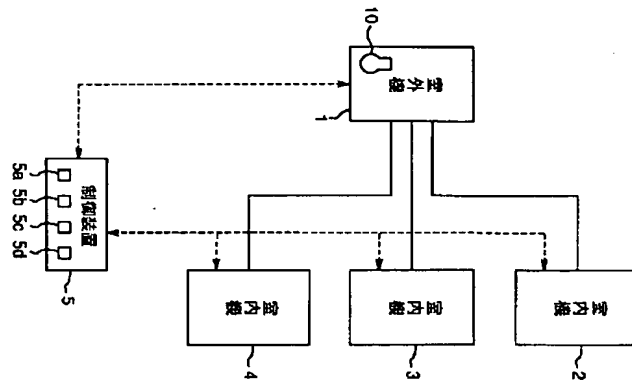
【符号の説明】

1…室外機、

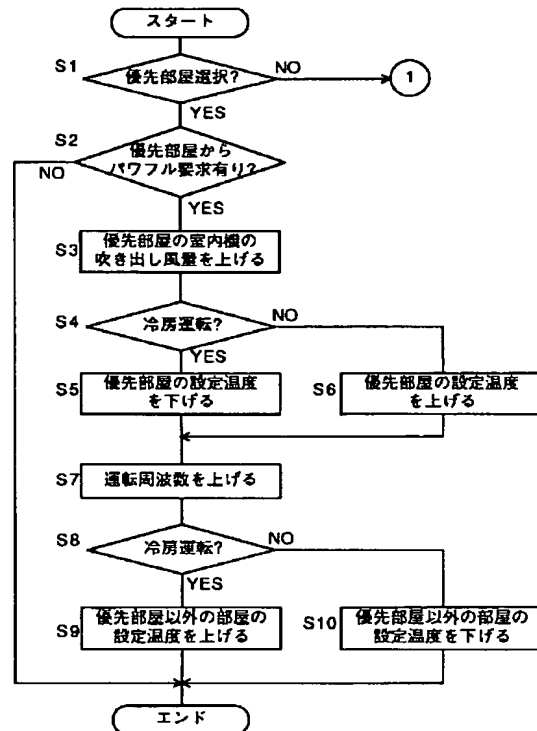
2～4…室内機、
 5…制御装置、
 5a…優先部屋選択部、
 5b…運転モード設定部、

* 5c…空調能力制御部、
 5d…設定温度変更部、
 10…圧縮機。

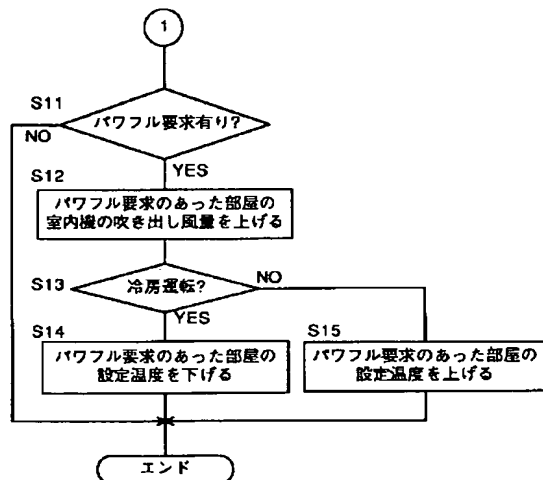
【図1】



【図2】



【図3】



フロントページの続き

(72)発明者 北川 武
 滋賀県草津市岡本町字大谷1000番地の2
 ダイキン工業株式会社滋賀製作所内

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